

Replaced by Article 34

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CLAIMS

1. An objective lens driving device comprising:
an objective lens provided for focusing light onto a recording medium
5 so as to optically record information on or reproduce the information from the recording medium;
a lens holder for holding the objective lens;
a plurality of support members for supporting the lens holder so that
the objective lens is freely movable in a focusing direction perpendicular to a
10 surface of the recording medium and a tracking direction perpendicular to the focusing direction;
a driving system for driving the lens holder in the focusing direction
and the tracking direction; and
a fixing member provided with a viscoelastic member formed for
15 holding the plurality of support members;
wherein each of the plurality of support members comprises
a linear portion formed linearly so as to connect with the
viscoelastic member provided in the fixing member and the lens holder, and
at least one arm portion branching off from an intermediate
20 area of the linear portion so as to reduce a resonance of each of the plurality of support members occurring when the lens holder is driven by the driving system.
2. The objective lens driving device according to claim 1, wherein the
25 arm portion is formed to connect with the viscoelastic member provided in the fixing member.
3. The objective lens driving device according to claim 1, further
comprising a base for fixing the fixing member,
30 wherein the arm portion is formed to connect with a base viscoelastic member provided in the base.
4. The objective lens driving device according to claim 1, wherein the
arm portion is formed in a plane perpendicular to the focusing direction.
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5. The objective lens driving device according to claim 1, wherein the
arm portion is formed in a plane perpendicular to the tracking direction.

6. The objective lens driving device according to claim 1, wherein the at least one arm portion comprises two arm portions,
one of the two arm portions is formed in a plane perpendicular to the
5 focusing direction, and
the other is formed in a plane perpendicular to the tracking direction.
7. The objective lens driving device according to claim 1, wherein the
arm portion is formed to branch off from a vicinity of a loop of a natural
10 resonance of the support members.
8. The objective lens driving device according to claim 1, wherein a
distance B between a position at which the arm portion branches off from the
linear portion and one end of the linear portion is $1/5$ to $4/5$ of a total length L
15 of the linear portion.
9. The objective lens driving device according to claim 1, wherein a
distance B between a position at which the arm portion branches off from the
linear portion and one end of the linear portion is $1/5$ to $1/2$ of a total length L
20 of the linear portion.
10. An objective lens driving device comprising:
an objective lens provided for focusing light onto a recording medium
so as to optically record information on or reproduce the information from the
25 recording medium;
a lens holder for holding the objective lens;
a plurality of support members for supporting the lens holder so that
the objective lens is freely movable in a focusing direction perpendicular to a
surface of the recording medium and a tracking direction perpendicular to the
30 focusing direction;
a driving system for driving the lens holder in the focusing direction
and the tracking direction;
a fixing member provided for holding the plurality of support
members; and
35 a viscoelastic member provided in the fixing member in such a
manner as to contact the plurality of support members, thus reducing a
resonance of the plurality of support members occurring when the lens holder

is driven by the driving system.

ABSTRACT

An objective lens driving device includes an objective lens provided for optically recording information on or reproducing the information from a recording medium, a lens holder for holding the objective lens, a plurality of support members for supporting the lens holder so that the objective lens is freely movable in a focusing direction perpendicular to a surface of the recording medium and a tracking direction perpendicular to the focusing direction, a driving system for driving the lens holder in the focusing direction and the tracking direction, and a fixing member provided with a viscoelastic member formed for holding the plurality of support members. Each of the plurality of support members includes a linear portion formed linearly so as to connect with the viscoelastic member provided in the fixing member and the lens holder, and at least one arm portion branching off from an intermediate area of the linear portion so as to reduce a resonance of each of the plurality of support members occurring when the lens holder is driven by the driving system.